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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/739,789	12/20/2000	Takuya Watanabe	NEC2010-US	3842

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EXAMINER

AWAD, AMR A

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 12/02/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/739,789

Applicant(s)

WATANABE, TAKUYA

Examiner

Amr Awad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 20 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) 2-8 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The references cited in the information disclosure statement filed March 26, 2001 have been considered by the Examiner; see attached PTO-1449.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Awamoto et al. (US Patent NO. 6,452,590; hereinafter referred to as Awamoto).

As to independent claim 1, Awamoto (figure 1) teaches a drive apparatus for a plasma display panel (col. 6, lines 59-64), and includes charge recovery circuit that re-uses a recovered electrical charge (for that, Awamoto teaches that the driving circuits 27 and 28 have a power recycling circuit for collecting and reusing the power that was used for charging a capacitor) (col. 7, lines 40-49). Awamoto teaches a brightness detection means for detecting brightness so as to obtain screen brightness information (for that,

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Awamoto teaches a data processing system (23) includes a memory having a gradation information (brightness information) to be supplied to the driving circuit 28) (col. 7, lines 23-37). Awamoto teaches a charge recovery timing control means for controlling the charge recovery period from a time which a charge recovery operation of the charge recovery starts to the time of fixing to a sustaining potential (for that, Awamoto teaches that the power recycling circuit 33a in figure 4 includes 2 inductors 51 and 52, the inductance values can be out of the range depending on the design giving a high priority to the charging and discharging time or the power recycling ratio) (col. 9, line 66 through col. 10, line 23). This is clearly showing that the time of recycling is varying and can be controlled.

Awamoto does not expressly teach that the recovery time control means controls the charge recovery period in response to the brightness information obtained by the brightness detection means.

However, as shown in figure 1, the control data DA which includes the brightness information is supplied to the address driver circuit (29) which includes the recycling circuit. The recycling circuit has different recovery period. Therefore, to have the correct brightness, the recovering of the charges will depend on the intensity (the brightness) of the display.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to realize from Awamoto's device that the period of the charge recovery will depend on the brightness of the display because, if the brightness of the device is high, the period or recycling (recovering) will increase to

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accommodate the excess of the charges, and if the brightness of the device is low, the time of recycling will be low. Such relation between the brightness and the recovering of the charge will reduce the power consumption without the degradation of the brightness (intensity) of the display device.

As to claim 9, Awamoto show power supply (25), such supply usually indicates the amount of power to be consumed in certain time, which broadly reads on the limitations power consumption measuring means in claim 9.

As to independent claim 10, the method of claim 10 is corresponding to apparatus claim 1 and is analyzed as previously discussed with respect to apparatus claim 1.

Allowable Subject Matter

5. Claims 2-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 2-5 and 8, none of the prior art of the record either singularly or in combination, teaches or fairly suggests a plasma display panel that includes among other features, an image signal accumulator for accumulating the brightness of each pixel, and an accumulated value comparator for determining whether an accumulated valued detected by the image signal accumulator is larger or smaller than a prescribed value.

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As to claim 6, none of the prior art of the record either singularly or in combination, teaches or fairly suggests a plasma display panel that includes among other features, having the charge recovery timing control means controls to change the charge recovery period for only a sub-field that has relatively large brightness weight, and leave the charge recovery period that has relatively small brightness weight.

As to claim 7, none of the prior art of the record either singularly or in combination, teaches or fairly suggests a plasma display panel that includes among other features, counting the number of pixels of a brightness exceeding a pre-established reference brightness.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nagai (US patent NO. 6,011,355) teaches a plasma display device capable of solving the problem of trade-off between the increase in recovery efficiency and the adverse effects upon discharge characteristics.

Moon (US patent NO. 6,111,556) teaches an energy recovery sustain circuit for AC plasma display panel.

Kishi et al. (US patent NO. 5,786,794) teaches a driver for a plasma display panel.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703) 308-8485. The examiner can normally be reached on Monday-Friday, between 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Saras can be reached on (703) 305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

A handwritten signature in black ink, appearing to read "Amr Awad". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

A.A.
November 29, 2002